

Appl. No. 09/838,004
Amdt. dated November 6, 2003
Reply to Office Action of November 20, 2002

PATENT

REMARKS/ARGUMENTS

Claims 1-18 are pending.

The Examiner objected to the drawings for not showing every feature of the invention specified in the claims. Accordingly, Applicants submit herewith a proposed new Figure 2 that illustrates a resistor coupled to at least one transistor switch. It is respectfully submitted that no new matter has been added.

Claims 1-15 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Blair (U.S. Patent No. 3,656,136) in view of Quantz (U.S. Patent No. 5,343,351).

Claims 16-18 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Malcosky (U.S. Patent No. 3,809,506) in view of Blair and Quantz.

These rejections are respectfully traversed and reconsideration is respectfully requested.

The Examiner contends that Blair teaches a safety circuit for an electronic motor, at least one motor winding and an input ground. The Examiner states that Blair teaches the claimed invention except for the safety circuit as recited in the various claims. However, it is respectfully submitted that Blair is directed to an electric motor with a safety sensing device. The sensing device is connected to one of the winding terminals of an electric motor and a measure of the winding resistance is effectively determined by the value of current flowing through the terminal. If the winding resistance is too low for safe operation of the motor as might result from moisture in the motor, a control signal is generated by a sensing means, which in turn will operate an indicating device to advise operators not to apply the main power source to the motor. The same control signal may be utilized to open a switch in the main power line and thus, prevent application of power of the motor until such time as the motor is in a safe condition for operation.

In contrast, Quantz discloses a starter motor energized through a relay that is protected from low voltages by a circuit that senses low voltages and turns off the motor relay via a transistor switch. The safety circuit is provided because sustained low voltage operation of starter motors can be injurious to a motor and thus, it is a general practice to provide a protection

Appl. No. 09/838,004

Amdt. dated November 6, 2003

Reply to Office Action of November 20, 2002

PATENT

circuit for a starter motor that monitors the system voltage when the starter is first energized and disables the motor if the voltage remains below a threshold for a predescribed time period. (See col. 1 of the '351 patent.)

In Quantz, the protective circuit 18 is connected to the battery voltage by a line 24, while a line 26 connects the generator voltage to the protective circuit. Protective circuit 18 senses the generator output voltage, as well as the battery voltage to determine logically whether the contacts 16 should be opened. The function of the protective circuit is to monitor the system voltage and interrupt starter operation by opening the relay contacts 16 if the voltage falls below 7 volts or if the voltage fails to recover to about 12 volts within the first 0.5 second of starter operation, thereby sparing damage to the starter motor that may result from sustained low voltages. The protective circuit also senses a generator voltage and interrupts the starter operation when it attains a value, for example, 17 volts, which indicates that the engine has started and reached a certain speed just below idle speed.

Thus, there is no motivation or desire for one skilled in the art to combine the teachings of Blair and Quantz. Blair has a safety feature for sensing moisture in the motor windings. Thus, if one were to combine the teaching of Quantz with Blair, there would be no teaching or even practical way to couple the safety circuit, specifically, a transistor switch, to the relay, at least one power input and at least one motor winding. Thus, even if one were to combine the teachings of Blair and Quantz, one would not arrive at the present invention as recited in the claims.

With the present invention, the safety circuit, in its various embodiments as recited in the claims, is attempting to insure that the relay is coupled to ground, which allows the transition switch to be turned on and that current will be allowed to flow between the power input and the motor winding, thus allowing the electric motor to operate. If the relay is not coupled to the input ground, then the transistor switch will be turned off and power will not be allowed to flow between the power input and the motor winding.

Accordingly, for the above-discussed reasons, it is respectfully submitted that claims 1-15 are allowable.

Appl. No. 09/838,004
Amtd. dated November 6, 2003
Reply to Office Action of November 20, 2002

PATENT

Claims 16-18 are directed to a pump that comprises an electric motor that includes a safety circuit as described above. It is respectfully submitted that the cited reference Malcosky does not make up for the lack of teachings in Blair and Quantz and therefore, it is respectfully submitted that claims 16-18 are allowable for at least the reasons discussed above.

CONCLUSION

In view of the foregoing, Applicants believe all claims now pending in this Application are in condition for allowance. The issuance of a formal Notice of Allowance at an early date is respectfully requested.

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 415-576-0200.

Respectfully submitted,



Kevin T. LeMond
Reg. No. 35,933

TOWNSEND and TOWNSEND and CREW LLP
Two Embarcadero Center, 8th Floor
San Francisco, California 94111-3834
Tel: 415-576-0200
Fax: 415-576-0300
Attachments
KTL:ldr
60045360 v1

400 / 401

Not Approved

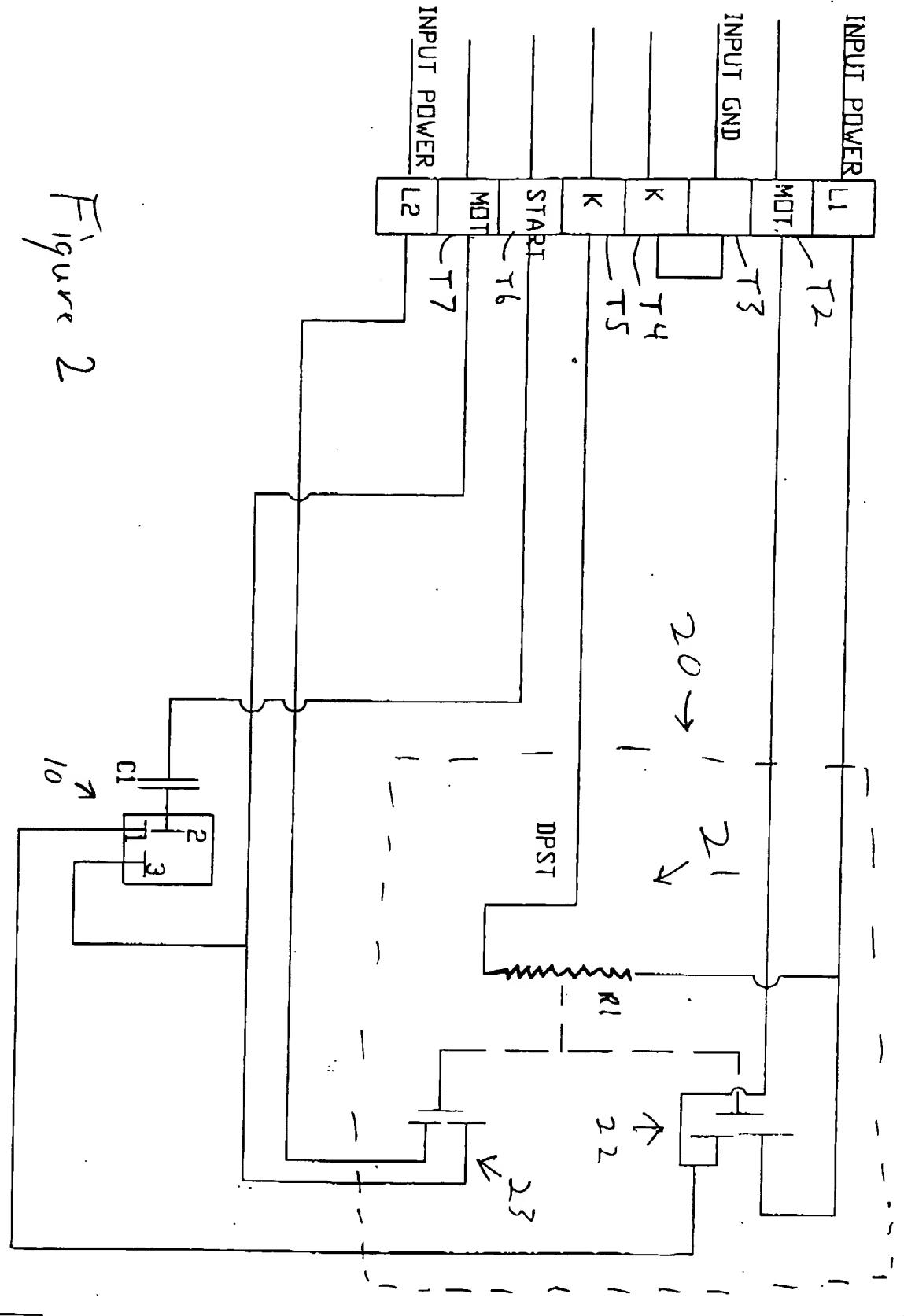


Figure 2